

- 10 -

WHAT IS CLAIMED IS:

1. A pegylated and hydroxlated trimetallic nitride endohedral metallofullerene comprising a plurality of hydroxyl groups and one or more polyethylene glycol moieties covalently bonded to a fullerene encapsulating a trimetallic nitride.
2. The pegylated and hydroxlated trimetallic nitride endohedral metallofullerene of claim 1 wherein the polyethylene glycol is covalently bonded to the fullerene through a malonyl moiety.
3. The pegylated and hydroxlated trimetallic nitride endohedral metallofullerene of claim 1 wherein the one or more polyethylene glycol moiety is covalently bonded to the fullerene through an ethyl malonyl moiety.
4. The pegylated and hydroxlated trimetallic nitride endohedral metallofullerene of claim 1 wherein one or more pairs of polyethylene glycol moieties are covalently bonded to the fullerene through a malonyl moiety.
5. The pegylated and hydroxlated trimetallic nitride endohedral metallofullerene of claim 1 wherein the polyethylene glycol moiety has a molecular weight chosen from about 350, 550, 750, 2000 and 5000.
6. The pegylated and hydroxlated trimetallic nitride endohedral metallofullerene of claim 1, wherein the polyethelene glycol moiety is methoxypolyethylene glycol.
7. An endohedral metallofullerene of the formula:
$$A_{3-n}X_nN@C_m(-R(-[O-CH_2CH_2-]_k-Q)_j)(-OH)_h$$
; where A and X are metal atoms, n=0-3; m is an even number between about 60 and about 200; 1 < h < m-2; i ≥ 1, j=1 or 2; and k > 1.

- 11 -

8. The endohedral metallofullerene of claim 7 wherein $j=1$ and R is an ethyl malonyl group.
9. The endohedral metallofullerene of claim 7 wherein Q is a methoxy group.
10. The endohedral metallofullerene of claim 7 wherein $j=2$ and R is a malonyl group.
11. The endohedral metallofullerene of claim 7, wherein k is about 7.
12. The endohedral metallofullerene of claim 7, wherein k is about 11.
13. The endohedral metallofullerene of claim 7, wherein k is about 16 or greater.
14. The endohedral metallofullerene of claim 7, wherein k is about 40 or greater.
15. The endohedral metallofullerene of claim 7, wherein, A and/or X are rare earth element and/or a group IIIB element.
16. The endohedral metallofullerene of claim 7, wherein A and/or X are chosen from among the group consisting of Scandium, Yttrium, Lanthanum, Gadolinium, Holmium, Erbium, Thulium, and Ytterbium.
17. A method of pegylation and hydroxylation of trimetallic nitride endohedral metallofullerene comprising,
reacting a malonyl-polyethylene glycol with a trimetallic nitride endohedral metallofullerene to form a pegylated trimetallic nitride endohedral metallofullerene;

- 12 -

reacting the pegylated trimetallic nitride endohedral metallofullerene with NaOH and TBAH in an organic solvent; and,

adding H₂O and H₂O₂ to hydroxlate the pegylated trimetallic nitride endohedral metallofullerene.

18. The method of claim 17, wherein the malonyl-polyethylene glycol is ethyl malonyl methoxypolyethylene glycol.

19. The method of claim 17, wherein the malonyl-polyethylene glycol is malonyl dimethoxypolyethylene glycol.

20. A pegylated and hydroxylated trimetallic nitride endohedral metallofullerene made by the method of claim 17.